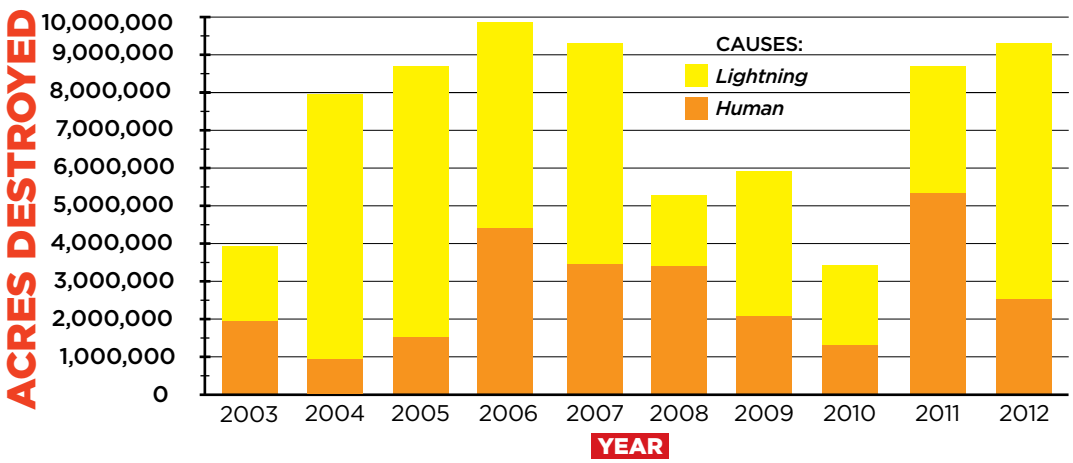
Name: _____

UP IN FLAMES

In "Firestorm" (p. 14), you read about why more wildfires are burning in the United States. The stacked bar graph below compares the areas destroyed by lightning- and human-caused wildfires in recent years. Use the data in the graph to complete the skills sheet.

TOTAL AREA DESTROYED BY U.S. WILDFIRES



SOURCE: NATIONAL INTERAGENCY COORDINATION CENTER

QUESTIONS

1. Roughly how many acres were destroyed by wildfires in 2004?

2. During which year on the graph did wildfires destroy the most acres in the U.S.?

3. Were more acres destroyed by fires caused by humans or by lightning in 2012?

4. Explain how one bar in a stacked bar graph is similar to a circle graph.

5. What information from "Firestorm" is best supported by the data in the graph?

(A) In the western U.S., most fires are started by lightning.
(B) In the eastern U.S., most fires are started by people.
(C) *Arson* is when people maliciously start fires.
(D) In several recent years, more than 8 million acres of land have been burned by wildfires.

Name: _____

WILDFIRES AND WILDLIFE

In "Firestorm" (p. 14), you learned that the number of wildfires has been on the rise. In this passage, you'll learn more about what happens to wildlife when fires strike. Read the article and paired text below. Then answer the questions that follow.

LIVING WITH WILDFIRES

Every year, wildfires burn through millions of acres of forests that house many species of wildlife. What happens to the animals when their homes go up in flames?

Surveys of forests show that a relatively small percentage of animal populations perish in wildfires. Animals sense when a fire is coming and run, fly, or slither away. Smaller invertebrates may safely wait out the fire by burrowing underground or beneath rocks. Some animals can't move fast enough and die from smoke inhalation or fire exposure. Those most at risk are old or young animals, such as newly hatched birds that can't yet fly.

The destruction that fires leave behind forces animals that live in dense forests to find new homes. But some species thrive in the aftermath. Insect populations move in to feed on dead or dying trees. The insect boom provides a feast for birds. After a fire, many new plants and trees begin growing. The fresh leaves provide food for plant-eating animals. And some species—such as small songbirds—rely on the young trees for habitat.

QUESTIONS

1. Which of the following statements is supported by the passage?

Ⓐ Most wild animals survive wildfires.
Ⓑ Wildfires can wipe out animal populations.
Ⓒ Young animals survive wildfires better than old ones.
Ⓓ Birds aren't affected by wildfires.

2. Which sentence from the passage BEST supports your answer to the question above?

Ⓐ Some animals can't move fast enough and die from smoke inhalation or fire exposure.
Ⓑ Every year, wildfires burn through millions of acres of forests that house many species of wildlife.
Ⓒ Those most at risk are old or young animals, such as newly hatched birds that can't yet fly.
Ⓓ Surveys of forests show that a relatively small percentage of animal populations perish in wildfires.

3. Which of the following is a synonym for *perish*?

Ⓐ die
Ⓑ escape
Ⓒ thrive
Ⓓ survive

4. According to the passage, what is one reason that animals return to a burned forest?

Ⓐ They are attracted to the smell of smoke.
Ⓑ They prefer open areas with fewer trees.
Ⓒ They are curious about the damage.
Ⓓ Dead trees provide food for some animals.

5. In the article "Firestorm," the author included the following statement: "Human-caused wildfires are never a good idea. But naturally occurring wildfires aren't always bad." Use evidence from the passage above to support his statement.

Name: _____

CHEMISTRY OF A FIRE

In "Firestorm" (p. 14), you read about some of the reasons wildfires start burning. The graphic below shows how fuel, heat, and oxygen can combine to create a fire. Use the information in the diagram and the article to answer the questions that follow.

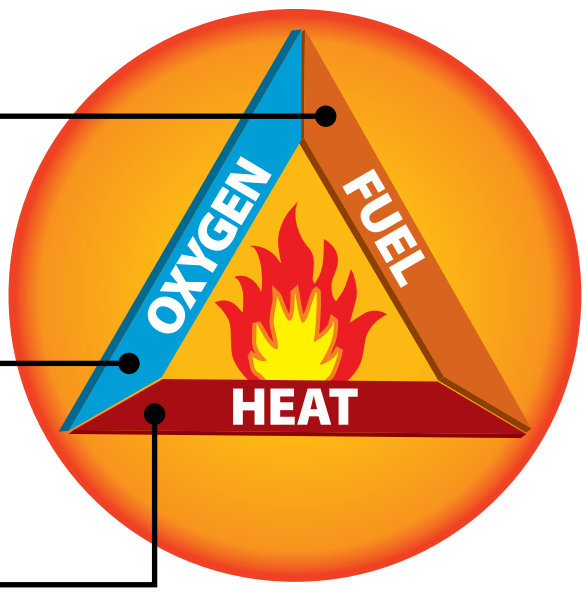
What Causes a Blaze?

Fires need three ingredients to burn: fuel, heat, and oxygen. Together, they create a chemical reaction that releases heat energy and light energy. Firefighters know that if they take away any of these three ingredients, the fire will go out.

FUEL: Anything that burns can be fuel for a fire. The drier the material, the more easily it will burn. Firefighters can stop wildfires by lighting small, controlled fires to burn up dry, dead plants that could fuel a fire.

OXYGEN: Fire needs oxygen from the air to keep burning. Wind supplies fires with more oxygen, helping them spread. Firefighters sometimes use foam to act like a blanket between the fire and the air, suffocating the fire until it goes out.

HEAT: A fire needs a heat source, like a match, to ignite, or start. When firefighters spray a fire with water, the water turns to steam. The process of transforming water into steam requires energy. As a result, some heat energy is removed from the fire.



QUESTIONS

1. What three ingredients are needed for a fire to start?

2. Name two things that should be good fuel for a fire.

3. Heavy blankets are sometimes used in emergency situations to put out small fires. Explain how this should help put out a fire.

4. Which sentence from the diagram supports the information about controlled burns in the section of the article called "Fighting Back"?

5. Explain how climate change could affect fuel sources for fires. How would this affect the likelihood of fires starting?

Name: _____

FIREFIGHTING SUIT

In "Firestorm" (p. 14), you read about a new high-tech suit that could help firefighters battle wildfires. Study the diagram on page 17 of the magazine. Then use the chart below to identify how engineers solved different problems firefighters might encounter by designing features for the suit.

PROBLEM	ENGINEERING SOLUTION
Firefighters need to carry heavy equipment to battle flames.	
Firefighters need to spray water on fires without getting too close to the flames.	
Firefighters often need to be able to see in dark or smoky areas while spraying water.	
In an emergency, a firefighter might need to move faster than he or she can in the high-tech suit.	
Firefighters often need to work for long periods of time.	
Firefighters need easy access to the tools they carry.	